



INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

<p>(51) International Patent Classification ⁷ : C12N 15/31, 15/63, 1/21, C07K 14/255, 16/12, C12N 15/62, 15/74, A61K 39/112 // (C12N 1/21, C12R 1:42)</p>	A2	<p>(11) International Publication Number: WO 00/14240</p> <p>(43) International Publication Date: 16 March 2000 (16.03.00)</p>
<p>(21) International Application Number: PCT/EP99/06514</p> <p>(22) International Filing Date: 3 September 1999 (03.09.99)</p> <p>(30) Priority Data: 98116827.1 4 September 1998 (04.09.98) EP</p> <p>(71) Applicant (for all designated States except US): CREATOGEN BIOSCIENCES GMBH [DE/DE]; Ulmer Strasse 160a, D-86156 Augsburg (DE).</p> <p>(72) Inventors; and (75) Inventors/Applicants (for US only): HENSEL, Michael [DE/DE]; De-la-Paz-Strasse 12, D-80639 München (DE). GUZMAN, Carlos, Alberto [AR/DE]; Mancinusweg 43, D-38304 Wolfenbüttel (DE). MEDINA, Eva [ES/DE]; Marstall 13/15, D-38100 Braunschweig (DE). APFEL, Heiko [DE/DE]; Ringstrasse 11a, D-86356 Augsburg (DE). HUECK, Christoph [DE/DE]; Hennchstrasse 1, D-86159 Augsburg (DE).</p> <p>(74) Agents: WEICKMANN, H. et al.; Kopernikusstrasse 9, D-81679 München (DE).</p>	<p>(81) Designated States: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, VZ, VN, YU, ZA, ZW. ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).</p> <p>Published <i>Without international search report and to be republished upon receipt of that report.</i></p>	
<p>(54) Title: ATTENUATED SALMONELLA SPI2 MUTANTS AS ANTIGEN CARRIERS</p> <p>(57) Abstract</p> <p>The present invention relates to vaccines, in particular, to an attenuated gram-negative cell comprising the SPI2 gene locus, wherein at least one gene of the SPI2 locus is inactivated, wherein said inactivation results in an attenuation/reduction of virulence compared to the wild type of said cell, and to a carrier for the presentation of an antigen to a host, which carrier is said attenuated gram-negative cell, wherein said cell comprises at least one heterologous nucleic acid molecule comprising a nucleic acid sequence coding for said antigen, wherein said cell is capable of expressing said nucleic acid molecule or capable of causing the expression of said nucleic acid molecule in a target cell.</p>		